

IN THE CLAIMS

Please amend the claims as follows:

1. (Withdrawn) An etching solution suitable for etching a resin layer based on a polyimide, the solution comprising:

3 to 65% by weight alcohol;

10 to 55% by weight alkaline compound; and

0.75 to 3.0 times the weight of the alkali compound water, wherein the alcohol comprises at least one alcohol selected from the group consisting of a diol containing from 3 to 6 carbon atoms and a triol containing from 4 to 6 carbon atoms and wherein the alkali compound comprises at least one selected from the group consisting of an alkali metal hydroxide and a quaternary ammonium hydroxide.

2. (Withdrawn) An etching solution suitable for etching a resin layer based on a polyimide, the solution comprising:

3 to 65% by weight alcohol;

10 to 55% by weight alkaline compound; and

0.85 to 2.5 times the weight of the alkali compound water, wherein the alcohol comprises at least one selected from the group consisting of a diol containing from 3 to 6 carbon atoms and a triol containing from 4 to 6 carbon atoms and wherein the alkali compound comprises at least one selected from the group consisting of an

alkali metal hydroxide and a quaternary ammonium hydroxide.

3. (Withdrawn) The etching solution of claim 1, wherein the alkali metal hydroxide comprises at least one compound selected from a group consisting of sodium hydroxide, potassium hydroxide and lithium hydroxide.
4. (Withdrawn) The etching solution of claim 2, wherein the alkali metal hydroxide comprises at least one compound selected from a group consisting of sodium hydroxide, potassium hydroxide and lithium hydroxide.
5. (Withdrawn) The etching solution of claim 1, wherein the quaternary ammonium hydroxide comprises at least one selected from the group consisting of tetramethylammonium hydroxide and tetraethylammonium hydroxide.
6. (Withdrawn) The etching solution of claim 2, wherein the quaternary ammonium hydroxide comprises at least one selected from the group consisting of tetramethylammonium hydroxide and tetraethylammonium hydroxide.
7. (Withdrawn) The etching solution of claim 1, wherein the diol comprises at least one diol selected from a group consisting of 1,3-propanediol, 2,3-butanediol, 1,4-butanediol and 1,5-pentanediol.
8. (Withdrawn) The etching solution of claim 2, wherein the diol comprises at least

one diol selected from a group consisting of 1,3-propanediol, 2,3-butanediol, 1,4-butanediol and 1,5-pentanediol.

9. (Currently Amended) A method for etching a resin layer, comprising:

forming a film-like resin layer based on a polyimide having an imidation

degree of from 50 to 98 %;

providing a resist layer having an opening at a position on a surface of the resin layer; and

bringing an etching solution at 65 °C or more into contact with the resin layer located at a bottom of the opening to etch the resin layer, wherein the etching solution comprises 3 to 65% by weight alcohol, 10 to 55% by weight alkali compound, and water in a weight of 0.75 to 3.0 times a weight of the alkali compound, and wherein the alcohol comprises at least one selected from the group consisting of a diol containing from 3 to 6 carbon atoms and a triol containing from 4 to 6 carbon atoms, and wherein the alkali compound comprises at least one selected from the group consisting of an alkali metal hydroxide and a quaternary ammonium hydroxide[[,]];

separating the resist layer from the resin layer; and

imidating the polyimide of the resin layer

~~wherein the etching solution does not comprise an amine compound.~~

10. (Currently Amended) A method for etching a resin layer, comprising:

forming a film-like resin layer based on a polyimide having an imidation degree of from 50 to 98 %;

providing a resist layer having an opening at a position on the surface of the resin layer; and

bringing an etching solution at 65 °C or more into contact with the resin layer located at a bottom of the opening to etch the resin layer, wherein the etching solution comprises 3 to 65% by weight alcohol, 10 to 55% by weight alkali compound, and water in a weight of from 0.85 to 2.5 times the weight of the alkali compound and wherein the alcohol comprises at least one selected from the group consisting of a diol containing from 3 to 6 carbon atoms and a triol containing from 4 to 6 carbon atoms and wherein the alkali compound comprises at least one selected from the group consisting of an alkali metal hydroxide and a quaternary ammonium hydroxide[[,]];

separating the resist layer from the resin layer; and

imidating the polyimide of the resin layer

~~wherein the etching solution does not comprise an amine compound.~~

11. (Original) The method of claim 9, wherein forming a film-like resin layer comprises heating a precursor layer based on a polyimide resin having an imidation degree of less than 50 %.

12. (Original) The method of claim 10, wherein forming a film-like resin layer comprises heating a precursor layer based on a polyimide resin having an imidation degree of less than 50 %.
13. (Previously Presented) The method of claim 9 wherein forming a film-like resin layer comprises:
 - applying a coating solution; and
 - drying the coating solution containing a polyimide having an imidation degree of from 50 to 98 % on a substrate.
14. (Previously Presented) The method of claim 10, wherein forming a film-like resin layer comprises:
 - applying a coating solution; and
 - drying the coating solution containing a polyimide having an imidation degree of from 50 to 98 % on a substrate.
15. (Currently Amended) A method for manufacturing a flexible wiring board comprising:
 - applying a coating solution containing a polyimide precursor on a side of a substrate having at least a metal wiring on which the metal wiring is provided;
 - drying the coating solution to form a precursor layer based on a polyimide

having an imidation degree of less than 50 %;

heating the precursor layer to form a polyimide resin layer having an imidation degree of from 50 to 98 %;

applying a resist layer coating solution on a surface of the resin layer;

drying the resist layer coating solution to form a resist layer;

patterning the resist layer in a shape to form an opening;

preparing an etching solution comprising 3 to 65% by weight alcohol, 10 to 55% by weight alkali compound, and water in a weight of from 0.75 to 3.0 times a weight of the alkali compound and wherein the alcohol comprises at least one selected from the group consisting of a diol containing from 3 to 6 carbon atoms and a triol containing from 4 to 6 carbon atoms and wherein the alkali compound comprises at least one selected from the group consisting of an alkali metal hydroxide and a quaternary ammonium hydroxide; and

bringing the etching solution at 65 °C or more into contact with the resin layer located at a bottom of the opening to etch the resin layer[[,]]; separating the resist layer from the resin layer; and

imidating the polyimide of the resin layer

~~wherein the etching solution does not comprise an amine compound.~~

16. (Currently Amended) A method for manufacturing a flexible wiring board comprising:

applying a coating solution containing a polyimide precursor on a surface

of a metal foil;

drying the coating solution to form a precursor layer based on a polyimide having an imidation degree of less than 50 %;

heating the precursor layer to form a polyimide resin layer having an imidation degree of from 50 to 98 %;

applying a resist layer coating solution on the surface of the resin layer;

drying the resist layer coating solution to form a resist layer;

patterning the resist layer in a shape to form an opening;

preparing an etching solution comprising 3 to 65% by weight alcohol, 10 to 55% by weight alkali compound, and water in a weight of from 0.75 to 3.0 times the weight of the alkali compound, and wherein the alcohol comprises at least one selected from the group consisting of a diol containing from 3 to 6 carbon atoms and a triol containing from 4 to 6 carbon atoms and wherein the alkali compound comprises at least one selected from the group consisting of an alkali metal hydroxide and a quaternary ammonium hydroxide;

bringing the etching solution at 65 °C or more into contact with the resin layer located at a bottom of the opening to etch the resin layer;

~~and~~ providing a resist layer having an opening at a position on the opposite side to a side of the metal foil on which the resin layer is formed to remove the metal foil exposed at the bottom of the opening in the resist layer[[,]];]

separating the resist layer from the resin layer; and

imidating the polyimide of the resin layer

~~wherein the etching solution does not comprise an amine compound.~~

17. (Currently Amended) A method for manufacturing a flexible wiring board comprising:

applying a coating solution containing a polyimide having an imidation

degree of from 50 to 98 % on the side of a substrate having at least

a metal wiring on which the metal wiring is provided;

drying the coating solution to form a resin layer;

applying a resist layer coating solution on a surface of the resin layer;

drying the resist layer coating solution to form a resist layer;

patterning the resist layer in a shape to form an opening;

preparing an etching solution comprising 3 to 65% by weight of alcohol,

10 to 55% by weight of alkali compound, and water in a weight of

from 0.75 to 3.0 times a weight of the alkali compound, wherein

the alcohol comprises at least one selected from the group

consisting of a diol containing from 3 to 6 carbon atoms and a triol

containing from 4 to 6 carbon atoms and wherein the alkali

compound comprises at least one selected from the group

consisting of an alkali metal hydroxide and a quaternary

ammonium hydroxide; and

bringing the etching solution at 65 °C or more into contact with the resin

layer located at a bottom of the opening to etch the resin layer[[,]]; separating the resist layer from the resin layer; and imidating the polyimide of the resin layer ~~wherein the etching solution does not comprise an amine compound.~~

18. (Currently Amended) A method for manufacturing a flexible wiring board comprising:

applying a coating solution containing a polyimide having an imidation degree of from 50 to 98 % on a surface of a metal foil;
drying the coating solution to form a resin layer;
applying a resist layer coating solution on a surface of the resin layer;
drying the resist layer coating solution to form a resist layer;
patterning the resist layer in a shape to form an opening;
preparing an etching solution comprising 3 to 65% by weight alcohol, 10 to 55% by weight alkali compound, and water in a weight of from 0.75 to 3.0 times a weight of the alkali compound wherein the alcohol comprises at least one selected from the group consisting of a diol containing from 3 to 6 carbon atoms and a triol containing from 4 to 6 carbon atoms and wherein the alkali compound comprises at least one selected from the group consisting of an alkali metal hydroxide and a quaternary ammonium hydroxide;
bringing the etching solution at 65 °C or more into contact with the resin layer located at the bottom of the opening to etch the resin layer;

and

providing a resist layer having an opening at a position on the opposite side to a side of the metal foil on which the resin layer is formed to remove the metal foil exposed at a bottom of the opening in the resist layer[[,]];

separating the resist layer from the resin layer; and

imidating the polyimide of the resin layer

~~wherein the etching solution does not comprise an amine compound.~~

19. (New) The method of claim 9, wherein the polyimide is synthesized from biphenyltetracarboxylic acid and aromatic diamine.
20. (New) The method of claim 10, wherein the polyimide is synthesized from biphenyltetracarboxylic acid and aromatic diamine.
21. (New) The method of claim 15, wherein the polyimide is synthesized from biphenyltetracarboxylic acid and aromatic diamine.
22. (New) The method of claim 15, wherein bringing the etching solution comprises removing the resin layer so as to expose the metal wiring at the bottom of the opening.
23. (New) The method of claim 16, wherein the polyimide is synthesized from

biphenyltetracarboxylic acid and aromatic diamine.

24. (New) The method of claim 16, wherein brining the etching solution comprises removing the resin layer so as to expose the metal foil at the bottom of the opening.
25. (New) The method of claim 17, wherein the polyimide is synthesized from biphenyltetracarboxylic acid and aromatic diamine.
26. (New) The method of claim 17, wherein brining the etching solution comprises removing the resin layer so as to expose the metal wiring at the bottom of the opening.
27. (New) The method of claim 18, wherein the polyimide is synthesized from biphenyltetracarboxylic acid and aromatic diamine.
28. (New) The method of claim 18, wherein brining the etching solution comprises removing the resin layer so as to expose the metal wiring at the bottom of the opening.